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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,337	05/23/2006	**Reinhold Braam**	2003P15404WOUS	3216

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EXAMINER	
SARWAR, BABAR	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,337	BRAAM ET AL.	
	Examiner	Art Unit	
	BABAR SARWAR	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/26/2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 04/26/2010 have been fully considered but they are not persuasive.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir.1992). In this case, the Examiner very kindly directs the Applicant to Elizabeth e.g., Page 48 ¶ [5], ¶ [6], ¶ [7], ¶ [8], Page 49 ¶ [12]- ¶ [15], Page 49 ¶ [6], Figs. 3a-b, 4a-b, that the object of Elizabeth is to facilitating a path discovery process for the source node to locate the other node. The source node broadcasts a route request message/packet (RREQ) to its neighbors, which then forward the request to their neighbors and so on, until either, the destination or an intermediate node is accessed with the route to the destination. Elizabeth further teaches that each node maintains its own sequence number and its broadcast ID as well. The broadcast ID is incremented for every RREQ the node initiates, and together with the node's IP address, uniquely identifies the broadcast ID. During the process of forwarding the RREQ, the intermediate nodes record in their routing tables the address of the neighbor from which the first copies broadcast packet id received. Once the

RREQ reaches the destination or an intermediate node with a fresh enough route, the destination/intermediate node responds by unicasting a route reply (RREP) packet back to the neighbor from which it first received the RREQ. Elizabeth teaches that as the RREP is routed along the reverse path, nodes along this path set up forward route entries in their route which point to the node from which the RREP came. On the other hand, in an analogous field of endeavor, Mohan R. Duggi (US Pub. No.: 2005/0041627 fully supported by the disclosure of the provisional application No.: 60/497, 274 filed on 08/22/2003) teaches a Mobile Ad-Hoc communication system directed to Ad-Hoc on-Demand Routing (AODV) or similar reactive Ad-Hoc routing protocols (See Duggi e.g., Ad-Hoc on-Demand Routing (AODV) or similar reactive Ad-Hoc routing protocols of ¶ [0007]). Duggi's invention describes a method to achieve the complete path information of active routes in an efficient fashion (See Duggi e.g., the method of obtaining the complete path information of active routes in Ad-Hoc networks (MANET) nodes of ¶ [0017]). Duggi teaches three new message formats defined to gather the path information (See Duggi e.g., path marker request, path marker reply and gratuitous path marker reply messages of ¶ [0048]- ¶ [0050]). Duggi teaches that very time a new destination is added to the routing table, if the precursor list is null for that entry, a path marker request will be sent to that destination (See Duggi e.g., the source node sending the path marker request (PMRQ) to the destination MANET node of ¶ [0048]); Duggi teaches when an intermediate node receives this message, it learns the path information to the source (See Duggi e.g., the intermediate node storing the path information all the way back to the destination MANET node of ¶ [0049]); it adds its

own IP address to the path marker message and relays it to the next hop along the path to the destination (See Duggi e.g., the intermediate node adding its own IP address to the PMRQ message and relaying across the next hop destination MANET node of ¶ [0049]). Duggi further teaches that destination MANET node extracts the complete path information back to the source and sends a path marker reply message with its own IP address (See Duggi e.g., the extraction of the complete path information back to the source MANET node of ¶ [0050]); when an intermediate node receives the reply message, it learns the path information to the destination, it appends its IP address to the path marker reply message (PMRP) and relays it to the next hop on the route to the source (See Duggi e.g., the appending of the PMRP and relaying the PMRP message to the next hop of ¶ [0050]). Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teachings of Duggi to Elizabeth so as to obtain the complete path information of active routes as discussed in (See Duggi e.g., ¶ [0017]).

In response to applicant's argument that the cited reference i.e., Mohan R. Duggi, is not the prior art, the Examiner kindly directs the applicant to the provisional application No.: 60/497, 274 filed on 08/22/2003. The Examiner kindly steers the applicant's attention to the following; Page 1 § [1]- § [3], where Duggi teaches all the necessary steps of the invention.

One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. In re Keller, 642

F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).Therefore, the previous rejection is maintained.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 19-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Elizabeth et al. ("A Review of Current Routing Protocols for Ad Hoc Mobile Wireless Networks" IEEE, April 1999) in view of Mohan R. Duggi (US 2005/0041627 A1, provisional application No.: 60/497, 274 filed on 08/22/2003).

As per claims 19, 25, Elizabeth discloses a method for establishing a connection between a service requester device and a service provider device in a decentralized mobile wireless network (See Elizabeth e.g., a source node, intermediate nodes and a destination node in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, Page 48 ¶ [6]); comprising a plurality of Internet Protocol (IP) routers (See Elizabeth e.g., a source node, intermediate nodes and a destination node with their IP addresses of Figs. 3a-b, 4a-b, Page 48 ¶ [6]), each router comprising a routing table (See Elizabeth e.g., the intermediate nodes maintaining their routing tables of Figs. 3a-b, 4a-b, Page 48 ¶ [7]): the method comprising: the service requester device sending a service discovery request message towards a service provider device via the plurality of IP routers (See

Elizabeth e.g., the source node broadcasting a route request packet by using a path discovery process to locate other nodes of Figs. 3a-b, 4a-b, Page 48 ¶ [6]); receiving the service discovery request message by each router (See Elizabeth e.g., the source node broadcasting a route request packet to the other nodes which then forward the request to their neighbors of Figs. 3a-b, 4a-b, Page 48 ¶ [6]); each router adding routing information pertaining to the received service discovery request message in the routing table of that router (See Elizabeth e.g., the intermediate nodes recording in their routing tables the address of the neighbor from which the first copy of the broadcast packet is received of Figs. 3a-b, 4a-b, Page 48 ¶ [7]); receiving the service discovery request message by the service provider device (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node of Figs. 3a-b, 4a-b, Page 48 ¶ [7]).

Elizabeth further teaches the service provider device responding to the received service discovery request message with a service discovery reply message to the service requester device (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node of Figs. 3a-b, 4a-b, Page 48 ¶ [7]). However, Elizabeth is silent about at least a portion of the plurality of IP routers adding routing information of the received service discovery reply message to the routing table.

In an analogous field of endeavor, Duggi teaches at least a portion of the plurality of IP routers adding routing information of the received service discovery reply message to the routing table (See Duggi e.g., the appending of the PMRP and relaying the PMRP message to the next hop of ¶ [0050]).

Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teachings of Duggi to Elizabeth so as to obtain the complete path information of active routes as discussed in (See Duggi e.g., ¶ [0017]).

As per claims 20, 33, the combination teaches everything claimed discussed in the rejected claims 19, 30. Further, Elizabeth teaches wherein the service discovery request message is comprised of at least one element of a route request (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node of Figs. 3a-b, 4a-b, Page 48 ¶ [7]).

As per claims 21, 36, the combination teaches everything claimed discussed in the rejected claims 19, 30. Further, Elizabeth teaches wherein the service discovery reply message is comprised of a route reply incorporating all information elements of the route reply (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node, placing the route record contained in the route request into the route reply of Figs. 3a-b, 4a-b, Page 48 ¶ [7], Page 49 ¶ [12]).

As per claims 22, 28, 32, the combination teaches everything claimed discussed in the rejected claims 19, 25, and 30. Further, Elizabeth teaches wherein the service discovery request and service discovery reply messages are in accordance with an Ad hoc On Demand Distance Vector Routing Protocol or a Dynamic Source Routing Protocol for Mobile Ad hoc Networks (See Elizabeth e.g., an A-Hoc on Demand Distance Vector Routing Protocol of Figs. 3a-b, 4a-b, and Page 48 ¶ [5]).

As per claim 23, the combination teaches everything claimed discussed in the rejected claim 22. Further, Elizabeth teaches wherein the Ad Hoc On Demand Distance Vector Routing Protocol or the Dynamic Source Routing Protocol of the request message (See Elizabeth e.g., an A-Hoc on Demand Distance Vector Routing Protocol of Figs. 3a-b, 4a-b, and Page 48 ¶ [5]) and the reply message is extended such that the routing table of a router is updated with routing information after the router receives the service discovery request message or the service discovery reply message (See Elizabeth e.g., the intermediate nodes maintaining their routing tables, routing back the route reply message (RREP) from the destination to the source node, placing the route record contained in the route request into the route reply of Figs. 3a-b, 4a-b, Page 48 ¶ [7], Page 49 ¶ [12]).

As per claim 24, the combination teaches everything claimed discussed in the rejected claim 19. Further, Elizabeth teaches wherein the service requester device is a client and the service provider device is a server (See Elizabeth e.g., a source node, a destination node in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, Page 48 ¶ [6]) and wherein each router of the at least a portion of the plurality of IP routers adds routing information of the received service discovery reply message to the routing table of that router such that the a route is traceable from the service requester to the service provider (See Duggi e.g., the appending of the PMRP and relaying the PMRP message to the next hop of ¶ [0050]).

As per claim 26, the combination teaches everything claimed discussed in the rejected claim 25. Further, Elizabeth teaches wherein the service discovery request

message is comprised of an indicator indicating to the routers that the routers should add routing information pertaining to the received service discovery request message to the routing tables of the routers (See Elizabeth e.g., the intermediate nodes adding/updating their routing tables by setting up forward node entries of Figs. 3a-b, 4a-b, Page 48 ¶ [7]).

As per claim 27, the combination teaches everything claimed discussed in the rejected claims 25. Further, Duggi teaches wherein the service discovery reply message is comprised of an indicator indicating to the routers that receive the service discovery reply message that routing information pertaining to the received service discovery reply message should be added to the routing tables of the routers (See Duggi e.g., the appending of the PMRP and relaying the PMRP message to the next hop of ¶ [0050]).

As per claim 29, the combination teaches everything claimed discussed in the rejected claims 25. Further, Elizabeth teaches wherein the service provider is a server and the service requester is a client (See Elizabeth e.g., a source node, a destination node in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, and Page 48 ¶ [6]).

As per claim 30, Elizabeth teaches a decentralized mobile wireless network system (See Elizabeth e.g., a source node, intermediate nodes and a destination node in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, Page 48 ¶ [6]), comprising: a network service available to a service requester (See Elizabeth e.g., a source node, intermediate nodes and a destination node (N1-N8) in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, Page 48 ¶ [6]); a plurality of Internet Protocol (IP) routers each having a routing table (See Elizabeth e.g., a source node, intermediate nodes and

a destination node with their IP addresses, the intermediate nodes maintaining their routing tables of Figs. 3a-b, 4a-b, Page 48 ¶ [6]- ¶ [7]); the service requester configured to transmit a service discovery request comprised of a first routing indicator and information pertaining to a desired service (See Elizabeth e.g., the source node broadcasting a route request packet by using a path discovery process to locate other nodes i.e., RREQ of Figs. 3a-b, 4a-b, Page 48 ¶ [6]), wherein the service discovery request message is multicasted from the service requester (See Elizabeth e.g., the source node broadcasting a route request packet by using a path discovery process to locate other nodes of Figs. 3a-b, 4a-b, Page 48 ¶ [6]), and wherein each router receives the service discovery request message and updates the routing table of that router with routing information pertaining to the received service discovery request message (See Elizabeth e.g., a source node, intermediate nodes and a destination node with their IP addresses, the intermediate nodes maintaining their routing tables of Figs. 3a-b, 4a-b, Page 48 ¶ [6]- ¶ [7]); a plurality of service providers configured to receive the service discovery request message from the service requester (See Elizabeth e.g., the source node broadcasting a route request packet to the other nodes which then forward the request to their neighbors of Figs. 3a-b, 4a-b, Page 48 ¶ [6]), each service provider configured to transmit a service discovery reply comprised of a second routing indicator (See Elizabeth e.g., the intermediate nodes maintaining their routing tables, routing back the route reply message (RREP); each service provider configured to transmit a service discovery reply message to the service requester if that service provider determines that the service provider provides a service identified in the service

discovery request message (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node of Figs. 3a-b, 4a-b, Page 48 ¶ [7]), each service provider configured to send the service discovery reply message such that the network is not flooded with the service discovery reply message (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node, placing the route record contained in the route request into the route reply of Figs. 3a-b, 4a-b, Page 48 ¶ [7], Page 49 ¶ [12]).

Elizabeth further teaches wherein the service requester is configured to receive the service discovery reply message such that a connection between the service requester and the service provider providing the service identified in the service discovery request message is established in the network (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node, placing the route record contained in the route request into the route reply of Figs. 3a-b, 4a-b, Page 48 ¶ [7], Page 49 ¶ [12]). However, Elizabeth is silent about wherein at least a portion of the plurality of IP routers is configured to receive the service discovery reply message and update the routing tables of the IP routers with information pertaining to the received service discovery reply message.

In an analogous field of endeavor, Duggi teaches wherein at least a portion of the plurality of IP routers is configured to receive the service discovery reply message and update the routing tables of the IP routers with information pertaining to the received service discovery reply message (See Duggi e.g., the appending of the PMRP and relaying the PMRP message to the next hop of ¶ [0050]).

Therefore, It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the above teachings of Duggi to Elizabeth so as to obtain the complete path information of active routes as discussed in (See Duggi e.g., ¶ [0017]).

As per claim 31, the combination teaches everything claimed discussed in the rejected claim 30. Further, Elizabeth teaches wherein the portion of the routers is determined via a route determined from multicasting the service discovery request message (See Elizabeth e.g., the source node broadcasting a route request packet to the other nodes which then forward the request to their neighbors Figs. 3a-b, 4a-b, Page 48 ¶ [6]) and wherein the service requester is a client and each service provider is a server (See Elizabeth e.g., a source node, a destination node in an Ad-Hoc mobile wireless network of Figs. 3a-b, 4a-b, and Page 48 ¶ [6]).

As per claim 34, the combination teaches everything claimed discussed in the rejected claim 30. Further, Elizabeth teaches wherein the service discovery reply message is comprised of a route reply (See Elizabeth e.g., routing back the route reply message (RREP) from the destination to the source node, placing the route record contained in the route request into the route reply of Figs. 3a-b, 4a-b, Page 48 ¶ [7], Page 49 ¶ [12]).

As per claim 35, the combination teaches everything claimed discussed in the rejected claim 31. Further, Elizabeth teaches wherein the service discovery request message is comprised of at least one element of a route request (See Elizabeth e.g.,

the source node broadcasting a route request packet to the other nodes which then forward the request to their neighbors of Figs. 3a-b, 4a-b, and Page 48 ¶ [6]).

As per claims 37-38, the combination teaches everything claimed discussed in the rejected claims 19, 30. Further, Elizabeth teaches wherein a destination address of the service provider device is unknown by the service requester device when the service discovery request message is sent (See Elizabeth e.g., the source node broadcasting a route request packet to the other nodes which then forward the request to their neighbors of Figs. 3a-b, 4a-b, Page 48 ¶ [6]).

Conclusion

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BABAR SARWAR whose telephone number is

(571)270-5584. The examiner can normally be reached on MONDAY TO FRIDAY 09:00 A.M -05:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, NICK CORSARO can be reached on (571)272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BABAR SARWAR/
Examiner, Art Unit 2617

/KAMRAN AFSHAR/

Primary Examiner, Art Unit 2617